Notebook, N-99-01-03

This notebook covers the period January-May 1899. It has been used in both directions. At one end is a series of unnumbered pages containing notes and drawings by Edison relating to tests of an electrolytic meter. At the other end are numbered and unnumbered pages containing entries by Edison and his associate, Francis R. Upton, regarding the crushing of cement rock. The book contains 121 numbered pages, some of which are blank, and approximately 60 unnumbered pages.

400
1 50
20 00
4 00
60.00

2 1/2

4 1/2

Allegretti

390 1p
3 75 25 30
3 65 45
3 35
300

400
2
8.00

3 90 10
3 60 40
3 10 50
2 25
1 50

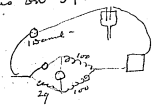
.952
.91
.91
.91

.0001
.05
.207

Jany 3rd 99

10/1000 tube Miller - 1/1000 sulphate copper

It was on 39 hours 12500 ohms measured



It totalled 29 ohms at end 36 hours
37 ohms - deposit was ok and was at rate
7.46 grms per amp hour -

placed it on Monday Eve 2nd at 6 pm with
same current as above. & rec 37 ohms.
after 14 hours deposit ok - Resistance
47 @ 42 ohms -

Before putting it on I added water
as nearly 1/2 was evaporated, after
doing so there was an EMF in
same direction as current so consider
measure resistance this was due
to increase density of solution

400 gm
10 Length

400 — gm —

~~25 gm~~

1 gm
500
250
125

Jany 3rd 99

because ohm well stirred Counter
EMF came in normal. It undoubtedly
is the local EMF counter or with that
changes rea an EMF with makes
Res low and ingment makes it high

I now at 130 pm plugged out Res
so there is 1300 ohm model and
of 12600 or 10 times the Current
the resistance comes down to
23 ohms Hg stands at 86 —

In 2 hours afterwards putting 12600
ohm in Res went up to about 35@37
in few minutes — I put it ~~back to 12600 ohm~~
on 100 ohms — to get about 10 degs of
deposit & then measure Res at 12600 ohm
in ckt = after 1/2 hour Res 28.
I guess I will leave it open ckt —
3 pm — with ckt open fund Coulb
EMF scarcely anything 1/2 deg on
galv —

4th Jan 99

after ckt open 1/2 hour. Res 42
will leave it open all night —
Jany 4th 8 am —
after being open all night —
in bridge but battery off —
1st measurement 50 ohms in
10 minutes after current from il
one cell through 12600 ohms
resistance dropped to 40
ohms — and to 38 in 5 minutes
more —, after 1/2 hour 43. —

Note if wrotandage tube by using
distilled Hg + water only. water
drops cling to side of capillary
bore or surface tension of Hg
is strong hence column is ragged
& similar weights do not check
up in the same time, 2 or 3 drops
of 1.2 sp.g. of Nitric in water

changes the surface tension of Hg & gives a clean full column -

Test of Solution

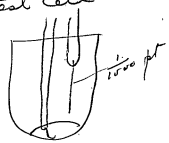
A salt White salt Crystalized out from action of heat with Merck 1.2 Spec g Nitric acid on Distilled Hg not in excess -

This salt dissolved by adding more acid + Hg diluting while hot with water, White ppt Came which was redissolved by HNO_3 - + left to Crystalize After Crystalized Mother liquor poured off + Crystals dried Couple days - they partially

turned yellow –

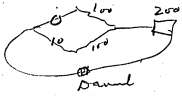
Dried salt was then put into considerable water & HNO_3 added till nearly all dissolved some free Hg also added –

put in test cell



and put for 10 minutes on 200 ohms with 1 cell – with Bridge

Res in one wall



370 — 30 — —

340 — 60 — 15

280 — 120 — 30

220 — 180 — 45

160 — 240 — 60

100 — 300 — 75

12600 ohms in ckt

Res 1 minute after taking it off of 200 ohm ck

Res 19 ohms —

" 18 " 5 minutes

9400 ohms in Res — 18 ohms

6200 " 16

3000 " 14

1400 " 13

600 " 12

200 $11\frac{1}{2}$

12600 ——— 24 -

This is a ~~drop~~ partially dried salt (re) pouring off mother liquor from action of 1.2 spec g Merck Reagent HNO_3 acid on great excess of Hg + very little liquid - acid full strength - dissolved crystals in minimum amount of water or acid -

12600 ohms 1 cell Dnl -

12600	ohms Res	9 3/4 ohms -
9400	"	9 3/4
6200		9
3000		8
~~[illegible]~~	-	
600		7 1/2
12600	—	9 1/2
"		8.75

12600 after 20 minutes

Res 7.85

" 7.85 after 15 m more

" 7.85 15 more

600-ohms $6\frac{1}{2}$ ohms

12600 ohms after 20 minutes
Res- 7 ohms

I leave it all night
on 12600 ohms.
This morning after 14 hours
the Resistance was Exactly
the same 7 ohms - " "

with 1400 ohm 5 $\frac{1}{4}$ ohms in Coil

Note I notice that when Merck's 1.2 Spec g Nitric acid (Reagent) is used on cold Mercury that the salt formed in Beakers 4 inch bottom 5 high is all yellow where salt formed in porcelain Evaporating dishes under like Conditions is White + very much greater in quantity Can it be that air gets to Reaction better in Evap. dish than beaker, or what is the Cause — ? ? ? —

after 1/2 hour on 1400 ohms 1 cell
Res with 12600 is 9 ohms —
after 1 hour 8 "
2 " " 7.85 "

added about 40 drops
1.2 acid — stirred it well
Didnt change Res any
after stirring —
Opened ck at night 14 hours
Res 7 Ohms through 12600
7.30 AM put it on 1400 ohms 1 cell

This meter with 8 ohm
1400 R in 1 cell – Solution
& then put on all night
with 200 ohm Res 1 cell –
had 170 ohm in morning
& big polarization opposite
to current –
Then put it on 1260 ohm for
1/2 hour Came to 80 ohm
lifted Electrode & stirred
solution a little with
bamboo splint Came to
25 ohm in 10 minutes was 12 ohm
Raw streaks –
This shows that 2 Milamp
with Trio Stalloric ~~[illegible]~~
is too great for Circulating

This is 30 times more current in 24 hours than meter will get so its probable that deposit will not be greater than circulation — came down to 7/20 [illegible]

NO 6 Meter 38 hours 12600 ohms — 1 Cell — 15 ohm Res.

NO 6 Solution

Took Lot of white Crystals from action of 1.2 Specy Merck Reagt. Nitric on cal Hg for 40 hours dissolved to saturation in little water with little acid — but large amount deposit also above — but whole on Round bottle brought up to say 120 — filtered with small piece Hg, set out doors when it got to 40 Tabs few small

25) 3250 (13
25
75

25) 5400 (216
50
40
100
75
25

125
20
2.5.0
9
125

25) 5100 (204
5.0
100

25) 7700 (308
75

Crystals on bottom, but when shook it large crowd of white fine crystals appeared & settled down – ~~[illegible]~~

put 30 or 40 drops more acid in but didn't appear dissolving any more – the liquid in cell was that filtered off when 40 degrees –

put it on 300 ohms for 4 minutes then 12600 – on 1 minute
12 2 minutes 10 3 minutes
9 – 4 minutes 8

With 600 ohm 7 –
" 12600 10 –
½ hour 8 ohm –
20 min more 7 "

56 —

63-

175
5
875

12) 175
12
350
175
210

12% =

12) 175 000 - (14,583

12
55
48
70
60
100
96
40

14583
5
72915

N 0 7 Sal

Another Solution –

White Crystals dissolved in water with dilute acid & ammonia followed put in bottle with free Hg 1st day crystals settled on bottom, kept it a week no change – attend that time put it out & chilled to 43 deg nothing chilled out, filtered, there is the solution –

26000 ohm

1st Res 29 ohms –

through 600 ohms for 1 minute

Res – in 600 15 Ω

back on 26000 Res 18½ Ω?

600 ohm 14

600 on 5 min 13 ½

26000 23 ohm

Solution X08'

Yellow white Salt washed with distilled water fairly well & then distilled water left over night in dish with great excess of salt, Temp rather low about 62. poured off & filtered X08 is the solution —

on 600 ohm Res 13 ohms

on 12600 Res 13 just same

No polarization when 600 ohm in or 12600 —.

~~[illegible]~~

after 1 hour went
up to 80 ohm with 1400
in during the hour
Mercury covered with
bubbles
Dropped bubbles of natural
solution with Gamboo
stick -
With 1.400 ohms in Came
down to 18 ohms -

I now put some Hg in the
bottle containing the main
solution to get it neutral -

1400 ohm now 17 ohm Res -

1st

100	on	57
200	on	2.416
200	Two	17.12

2nd

100	—	5.815
200		2.815
200		12.16

3rd

100		67
200		22.6
200		2.21

4th

100		76
200		15.17
200		6

No 9 Sal is white salt
dissolved in hot water, all that
would, with Fresh Hg in water
then filtered + fresh Hg
put in — Jany 11th 98 4 pm.

~~Nos salt~~

all night on 1400 ohm
Resistance 1 ohm higher (1.0) 18
ohms this morning 17 last
night, stirred it well
to increase went down to 16 ohm
Saw bubble on Hg in cell
On 12600 only 13 ohms —
Polarization only 1 deg —
12600 after 1½ hours 11 Degs —

8 Sal –

Corner descents of ohms with
1400 ohms – 1 deg polgn
with this – no polgn on 25000,
$1\frac{1}{4}$ deg polgn on 400 ohms
Res on 400 ohms – 4 1/2 ohms –
26000 increased rapidly after
taking off from 400 ohms. 12 –
in 1/2 minute – 11 – in 1 min 10.

9 ohms in 5 minutes –
15 min 8.85 ohms –

in 10 more minutes 3000 ohms in
7.85 –

Wire fairly coated with
globules Taped glass lightly
all went off Res rose from
7.85 To 15 ohms instantly
in 1/2 minute 12 ohms 2 minute 10 ohms
9 ohms in 5 minutes –

in 10 minutes wires were fairly
covered with globules but not
nearly as large as those
1st knocked off -

8½ in 13 minutes -

2 hours 7.85

Left it at 6 30 pm.
at about 8½ ohms Res
with 3000 ~ Ckt =

after - 13 hours 730 Am -
Res 9 ohms

On 26000 Res 15 -

stirred up liquid with Bamboo
& knocked Bubbles off -
26000 ohm Res - 20 ohms
12 Res in 5 minutes - 8 am -
1½ hours after 8½ =

1 hour near 26000 7,80

put it on 200 ohms - Res $5\frac{1}{2}$ ohm

in 15 min then put on

26000 - in 1 minute

was 16 ohms -

in 15 min back to 10 —

---

9 now wash Cell out

and try Solution 10

Made with Chlorate of Hg

ppt'd Mercurous Nit with

Caustic K got black

Mercurous ox - washed it fairly

well dissolved in Chloric acid

diluted with about twice

its bulk water - dis

Black ox in it there is
some black ox left also
Some yellow stuff —
filtered off & put in
bottle with some free Hg
Hg always bright & runs
together good —
put it on 600 ohms
for 3 minutes to get a deposit
of globules — Res 20½ ohms
of diluted solution little
with water as there seems
to be crystals form on surface
of Hg in cell but water
did not remove them I
increased them —

3000 ohm Res 33 ohm
Res goes up as Current
strength increases -
may be solution is too dilute -
palgn: 2 deg in deviation of
Current,
on 12600 Res drops to
26 probably Crystals
forming make a current -
Evidently solution should
be stronger -

Solution from 108 bottle
which has been 24 hours
on steam bath to get
rid free acid =

600 ohm in ckt res $6\frac{1}{2}$ ohms
12600 4/75 ohm
This is because liquid is slightly
warm + cold Hg poured in
gave a Thermo Current - I
stirred it with bamboo -
this brought it way down
but there is a slight one
yet in same direction
as Current + this accounts
for above measurement
after 1/2 hour on 12600 ohm
Res 5 ohms -
palpn in same direction 3/4 deg
on 3000 ohm 7 ohm recent Res -

Left on all night 3000
ohms $7\frac{1}{2}$ ohms —

This morning 10 ohms scant
day 9.85 —
Tapped bubbles off Res 15 ohms.
Shook solution, Res for instant
went up 600 to 15 then
went to 13 — in 2 hours
8 ohms — on 12600 9 ohms
on 600 7 ohms —
back on 12600 — 10 ohms —
after 2 hours 10 ohms
Polzn 1 deg against Current —
6 pm still 10 ohms —
Knocked bubbles off $15\frac{1}{2}$ ohms —
left it for ~~night~~ overnight 12600 ohm 10 ohm Res
Res this morning 36 hours about 10.9 to 11 ohms

Monday 15

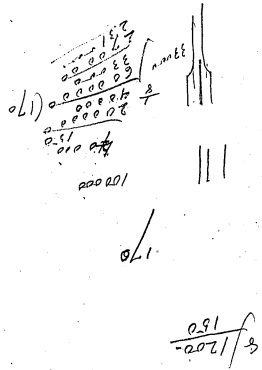
I shook it up - with bamboo
Splint = Res 20 ohms -
Hg dont run together very well
has a bullish surface -

Solution from 1906 Cattle -
has Gas stopping - probably
air kept well out -
When I took Cattle which
was been 2 or 3 days with
or 3 days without heat -
Lots Gobbles Came off -
~~Res~~ 12600 in Res Solution Sold
& put in 16 ohms -
after 1½ hours 10 ohms -
½ hour 9.4 -

Solution No 12

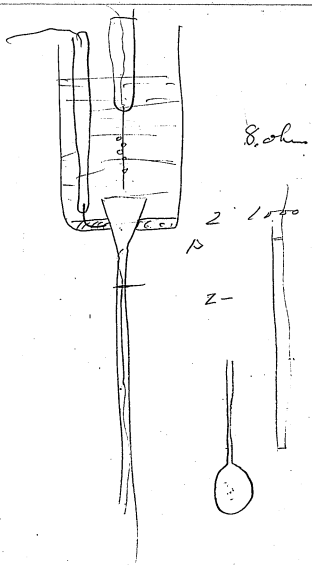
9 Gs plenty Hg & amo: water
& 1.2 Specgrav Mercles
Reagent acid-acting
away sunday - Mackie
Water poured off Crystals
& Crystals dried on
Steam ~~bath~~ plate 4 or
5 hours - put in bottle
with distilled Water &
Let Hg - not filtered -

Solution 8 in - 9 ohms
after 2 hours & solution Cold
400 ohms 70°F - then immersed
in 12000 ohms Res 10 ohms



No 16 Solution –

Large flat dish Dest Hg
1.2 Merck Reagent acid
& some water – added 36
hours Crystals drained
off – dried ~~[illegible]~~ several hours
put all in bottle with
free Hg & dest Water –
3 days – There was a
huge on Steam plant part filled
hot white salt not dis –
filtered Solution & put
free Hg in this Solution
It was Solution No 12 Solution
before filtering –

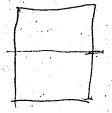

8. ohm
2 1000
p
2 -

[THIS BOOK WAS USED IN BOTH DIRECTIONS. THE FOLLOWING PAGES WERE FILMED FROM THE BACK END FORWARD.]

N-99-01-03

20 3X4X 16'-0

3/8 nipples 2" long



1

15.25
436
14.61) 43600 (22
3962
3980

1.36
8.25
9.61) 1.3600 (14
961
3990
3844

33000) 6000000

100000

181
362 —

1/10) 600 -

362 -

100000
33000) 6000000 (181
33000
270000
264000
6000

~~Case 60~~

Case	50
Standardizing Tube,	3
Scale (paper)	1
Shunt,	10
95 Spool	25
Iron Spool	5
Brass	12
Wiring	5
Hinges	6
Locks	12
Platinum	4
Rubber	3
Clamps for Regulating	6
Bottle	2
Bucket	5
Strip	5
Screws Contact + Coiling	7
Large Binding Screws etc	6
Assembling	15
Wooden Packing	10
Inspection	6
	198

April 3 1899 7

60 Grammes taken of
Cement clinker broken
to pass through 1/4" sieve
and fine through .035
sieve sifted out. This was
done as there was quite
an amount of plaster
on the clinker

Then 300 Grms in
mortar
Sieved on 200 mesh
Took 50 Grammes
24 1/2 remained on screen
49%

60 Grammes Ethiron ore rock crushed to go through 1/4" mesh. Then on .035 sieve.
60 Grammes taken and ground 300 turns

Took 50 Grammes and sieved on 200 mesh
8 1/2 Grammes on screen or 17%

60 Grammes Cement Rock
crushed to go through
1/4" mesh. Then on
.035 Sieve.
60 Grammes taken
and Ground 30 times
Then sieved 200 mesh
Screen 50 Grammes
On 200 screen 28 Gms
or 46 %

Crushed ~~[illegible]~~ cement clinker ~~[illegible]~~ in steel cylinder about 1" diameter under hydraulic press pressure 300 atmospheres

22% of 20 grammes crushed passed through 200 mesh screen.

Crushed than 3 ~~[illegible]~~ same method

200 atmos. On 200 mesh 14.53
Through " " 5.13
19.66
On 200 mesh 72. %
Through " " 26 "

100 atmos. On 200 mesh
Through " " 1.95 grms
On " 17.95
19.90

On 90.
Through 9.

April 4 1899

Gordon
Crushed cement Rock
Through 1/4" mesh and
on .035 in cylinder
about 1" diameter
using 300 atmospheres
in hydraulic press.
10 grammes Taken each
time for crush
20 grammes sifted
On 200 mesh 13.24 grms
Through " " 6.46 "
19.70

6.6 % on
3.3 % Through

Cement clinker

200 atmospheres
On 200 mesh 16.70
Through " " 3.17 3.13
19.87
On 84.1 %
Through 16. %

100 atmospheres
On 200 mesh 18.95 grms
Through " " 1.87
~~20~~.82
19.
On 89 %
Through 10 %

Edison Ore Rock
200 atmospheres
On 200 mesh 16.88 grms
Through " " 3.00
On 84 %
Through 15 %

100 atmospheres
On 200 mesh 18.89
Through " " 1.68
19.57
On 89. %
Through 8. %

~~Et~~ Cement clinker crushed
same as on preceed ing page
300 atmospheres
On 200 mesh screen 16.35 grms
Through " " " 3.60
19.95

On 81 %
Through 18 %

Edison Ore rock same method
~~200~~ 300 atmos
On 200 mesh screen 15.64 grms
Through " " " 4.15
19.79

On 78 %
Through 22

On 200 mesh

	100 Atmos	200 Atmos	300 Atmos
Edison Ore	89	84	78
Cement Clinker	89	84	81
" Rock	90	72	66
Hard Edison			80

Thru 200	11 %	16 %	22 %
	11	16	19
	10	28	34

Edison Ore all hard
dark pieces
Through 1/4" on .035
20 Grammes
300 atmos on 10 Grammes

On 200 mesh 3.92
Through " " 15.90

On 20
Through 80

April 13 1897

A small amount of cement clinker was put through rolls with pressure of air 15 lbs. The ~~sta~~ result was flakes of cinder.

These broken up in mortar with 20 turns of pestle

	Summes	
On 100 mesh	2.500	23%
" 200 "	1.550	14
Through " "	6.600	62
	10.650	99

10.65) 2500 (23
2130
3700

10.65) 1550 (14
1065
4850

10.65) 6600 (62
6390
2100

1.550
6.600
8.150) 1.550 (19%
~~8150~~
7350

2.55
5.70
8.25) 2550 (30.9
2475
7500

30.9 %
661 %

Trap rock crushed with
30 lbs of air on cylinder

20.00 Grammes taken
Grammes 20 times in mortar after
sifting

	on 100	11.250
	on 200	2.550
42% { 29.2%	Thru 200	5.700
		19.500

19.5) 5.700 (29.2
390
1800
1755
450

2.55
5.70
8.25) 5.700 (7

19.5) 825 (42%
780
450

25 Grammes taken after breaking up in porcelain

On 100 mesh ~~17.00~~
On 200 " 0.925
Through 200 " 4.80
22.725

3.5
9.7
13.2) 3.5 (27.3
264
0960
~~792~~
924
360

25) 480 (19.2
25
230
225
50

27.3 %
72.7 %

49 %

Trap rock crushed with 50 Lb of air

25

% 27.25 Grammes taken

On 100 mesh 13.5
On 200 " 3.5
36.3 Through 200 " 9.7 Gm
26.7

26.7) 9.7 (36.3
801
1690
1602
880

3.5
9.7
267) 13.2 (49
1068
2520

Trap rock crushed 50 lbs. pressure at rate 49 tons 600 lbs per hour.

On 100 mesh	25.200
On 200 "	2.000
18.4% through 200 "	6.150
	33.350

33.35) 6150 (18.4%

3335

28150

26680

14700

380) 13800 (30.
114
240

Trap rock crushed 75 lbs
~~by~~ Broken up in porcelain
mortar by Mr. Eglesia
25 grammes taken

on 100
on 200 .70
through 200 3.45 13.8%

25) 3.45 (13.8
25
95
75

345
70
415) 70.0 (17
415
2860

Flakes of cement chicken
Entree 25 Servings

On 100 meals 12.95
" 200 " 2.85
44 { Through 200 " 8.20 33%
24.00

2.85
8.2
25) 11.05 (44
100

25) 820 (32
75
7

Rolls changed so that there was a smoother middle roll

4/5 Tons an hour of Cement clinker

30% of sample through 100 mesh

67 1/2 Bbls. an hour

---

67 Tons an hour clinker

26% through 100 mesh screen

87 1/2 Bbls. an hour

Flakes taken from the 67 Tons an hour cement clinker

25 Grams through 100 or 200 2.25

through 200 5.7 23%

32% 7.95

25) 57 (23%

25) 225 (9

57
2.25
7.95) 570 (7.9
5575
1250

29% on 200 mesh

April 24

Cement clinker crushed at 35 rate 67 tons an hour

Sample lightly broken up in Porcelain mortar:

25 Grams taken

		%
Through 100 mesh on 200	2.45	10
Through 200 mesh	4.60	18
	7.05	28

34.8%

704 — 2450 (34.8
2112
3380
2816
564

67
28
536
134
1876
1340

7.05 (2455 (34.8
2115
3350
2820
5300

7/1000 Atlas Cement concrete 7k
cases
25 Grammes Taken

			% 25 Gms
On	100	0.5	2
On	200	3.6	14.4
Through	200	19.4	77.6
		23.5	94.0

9/1000 Atlas Cement Through 9/1000
25 Grammes Taken

			%
On	100 mch	1.1 Gmms	4.4
On	200 "	6.55 "	26.2
Through	" "	16.25 "	65.
		23.90	95.6

on 200 — 3415
on 100. 000

42.2
18
60.2

25) 460 (18
25
210
200

25) 1065 (42.2
100
65
50
150
100

25) 100 (40

23.7) 1000 (42.1
948
520
474

67 ton test 28% through 100 mesh
Standard Screen

On testing same stuff on our regular 9 mesh screen gave for 25 grms

On 100 4.6 18%
on 200 10.65 — 42.2
Through " 8.190

The reason for above is that with the thin slime nearly all the float slime to the ore & did not go through screen

.004 screen

on 200 10 grm 40
Through — 13.7 —
some got lost somewhere.

or 40% but less fine. 42% on 200

25 — 28 / 19019 (

4.719 28 / 90 (32
14300 84
19019 60
56
4

9

25 / 107 (= 28
100
70
200

107
33

80 — 20

143
33
429
429
4719

Tried some 67 fineness test Cement mixed with, 75% about of 1/8 mesh Coarse ore

00q. screen cement appears good

on 100 — 00
on 200 — 10.7 / 42.8
Through 200 — 14.3

25 / 10.7 (4 28
100
70
200

2 3/4 lbs sand assumed on
18/100 screen stuff stacked on
used -

1 1/2 lbs of 67 Tin stuff -

39/100 of lbs fine was in
the 1 1/2 =

9.36 oz -

or 13.7 of total was

Portland Cement -

If got it all wanted give on
a 6000 lb feed 450 lbs
hour - with 50% efficiency

390 lbs hour

2 3 grammes sample of
fine came through 009 screen
3 passes -

on 100	1.9	7.6%
on 200	10.2	40%
Through	12.1	48.4

Sample not fine enough

68)936(13.7
68
256
234
5.20

25)190(7.6
175
15

4.25

47.6

68)936(13.
52
416
416
102
5

25)190
125
65
50
15

6000
13
18000
6000
78000

2.75
1.25
4.25

390
.39

6000
7

2.4
3.4
216
72
9.36

25)1210(48.4
100
210
200
10

7.6
3.9
24.0
9.36
4.25
16.8
7.6

25 | 1320 (52.85
125
100
250
225
200

48 | 4000 (48.
2

25 | 1245 (49.8
100
245
225
200

6.2.

25 | 185 (7.4
175
100
100

4 | 16
16

25 | 245 (9.8
225
200
200

25 | 96 (3.84
75
200
192
48

48 | 4000 (83.3
384
160
144
16

25 | 87 (3.4
75
120
100

3

64 | 403

64 | 4000 (62.5
384
160
128
32

2 3/4 lbs coarse stuff ~~about~~ varying all from 1/16 to 1/8 mesh

1 1/2 lbs of 67 Tin test,

3 passes over 009 screen (57.2)

stuff not near fine enough -

on 100	1.85	7.4%
on 200	12.45	49.8
Through 200	9.6	38.4

1 1/2 lbs Coarse ~~passed~~ passed through .018 - fines weld - these were passed through .012 mesh to take coarse out ~~and used~~ to take coarse out was that as the 1 1/2 lbs was between .018 + .012 — Mixed this with 11 oz of 67 Tin test,

on 100	2.45	9.8%
on 200	13.20	52.8
Through 200	34.	

Coarser than #18 nonepby
Coarser than 1/16 inch

2 3/4 lbs of this
1 1/2 lb 67 Tm test stuff
007 screen
3 passes

(51.47%)

25 grms

On 100	.5	2%
On 200	12.35	49.4
Through 200	11.70	

We take a lot of 67 Tm test stuff make 6 passes over a 007 screen get fine stuff. Then mix 12 oz of this with 60 oz of 1/16 @ 1/8 Coarse sand. The fines Gem 20% of cokale - Then with the mix time we make 4 passes over 007 screen seems Gz finer

0031

25) 1235 (49.4
100
235
225
100

50

12.35
1.85
1170
2.45

nearly all apparently screened through - angle of screen is 49 45 should be 40 I think to get best results -

4 passes 609	On	100	0.80	3.2
	on	200	13.60	57.6
	Through	200	10.25	
			24.65	60.8%

The fine stuff was very coarse stuff to start with because when I screened the balance left in the coarse it was very coarse - showing that rescreening made a very good seperation -

We now put the the fine together the rescreen & the fine from screening coarse + mix 10 3/4 oz with 53 1/2 oz of coarse with all

$$25\overline{)80}\ (3.2$$
$$75$$
$$5\ 0$$

$$25\overline{)136.8}\ (5.76$$
$$144$$
$$125\ 0$$
$$195$$
$$150$$
$$150$$

25) 11.40 (.45
1000
140

12.7

1340
875
465

25
35
125
75
875

20 ½

25) 134 (5.36
125.0
9.5.0
150

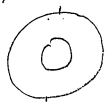
out that would go through a 51
of 2 screen + none coarser than
1/16 this is to see the
effects of rescreening with
finer coarse stuff

			%
on	100	00	53.6
on	200	13.4	
Through	200	10.7	
		24.1	

4 passes over 004

355.65) 151.400 (42.6
.42260
091400
.71136
202700

24.6
29.85
32.05
23.40
26.50
15
151.40



200

61.8
13.0
74.0
71.3.0

355)

21

748
118
91

17

918) 1700 (10
918
782

(assessed by fingers on screen) 53

13 oz Talc

Through screen	13.05 Grams
.007	
.009	~~2 lbs oz~~ 68.8
.012	34.1
.015	29.65
.020	30.50
.027	35.15
.035	24.60
.045	29.85
.058	32.05
.072	23.40
.092	26.50
On .092	15.
	355.65

} .4267

This is 13 oz of 67 Tin test screen through blanched round hole fresh

30
39

13
29
117
26
379

355) 13000 (3
1065
355) 7400 (20.
710
350

3 lbs sand screened on .045 screen

1 1/2 lbs 67 lbs cement clinker.

~~Sifted on .012 screen 3 times Coarse~~ ~~Enclosed~~

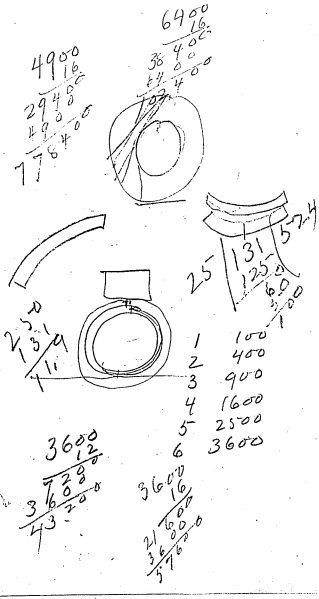
Sifted on .009 screen Enclosed 3 times

25 grm

		%
on 100	2.65	10.6%
200	15.00	
through 200	6.60	

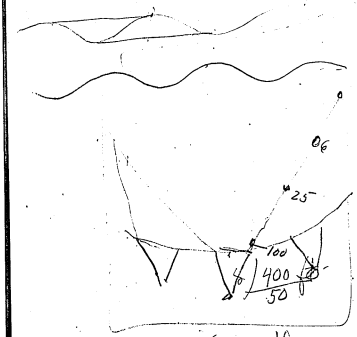
25) 265 (10.6
25
30

25) 176.5 (10.6
175
15



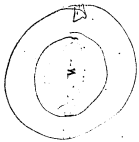
Took some Coarse sand
took out all ~~smaller~~ than
.045 — none much
larger than 1/16 —
Took 3 lbs added 1 1/2
lbs of 67 Ton grinding
then took another 1 1/2
lb 67 Ton stuff got all
fines out through a
.007 Round hole + added
this to above make
double quantity of fines

on 100 13.1
Through 11.9
52.4 %
200 mesh

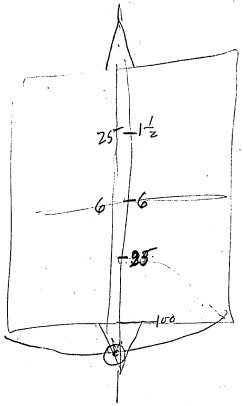


200
400) 400

3) 54
18
36



4#



25 6850 (27.4
6,055
1850
1750
100

25 6850
1850

6,850

See last Experiment -
put all the fines back
+ Run it 3 grams over
007 slot screen -

25 grams -

On 200 6,850,
Through 18 150

or 27.4 % on
200 -

25) 2650 (11.4
~~25~~
~~3~~
~~25~~
~~100~~
1

Dec last Experiment
put all back
3 passes through 004 slot.

on 200 mesh
Through 200 - 2085

11.4 %

on 200 mesh —

	25 Grammes	Taken
#1	On 100 mesh	2.356 Grammes
	" 200 "	10.650 "
	Thro " "	11.450 "
		24.450

#2	On 100 mesh	2.000
	On 200 "	8.650
	Thro " "	14.000
		24.650

#3	On 100 mesh	1.600
	" 200 "	8.900
	Thro " "	14.150
		24.650

25 | 14.156
55%

462 Grammes of fines that passed .004 slot taken
That is fines from 4X3 lbs = 12 lbs of "67 7 bns" clinker

4 | 462
115 Grammes from 3 lbs.

Took 3 lbs of "67 7 bns" clinker passed over 9/1000 slot 3 times
Sample #1 Thro 9/1000 slot

Added to what was over 9/1000 slot, 115 Grammes of fines that pass. .004 slot
Sample #2 Thro 9/1000 slot
Passed 3 times over screen

Again in like manner 115 Grammes fines added
Sample #3 Thro 9/1000 Slot

1/2 — 15 —

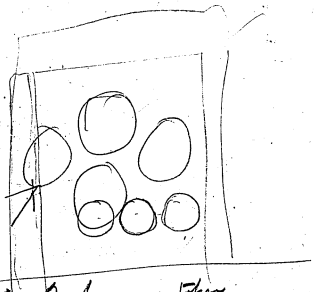
25 for 12.5
12.5 —

375 (2250 (33 25
1125 125.
125 37.5

2500
2250

#4 2.5 Grammes taken

	Grammes
On 100 mesh	1.400
" 200 "	8.600
Thro " "	14.750
	24.750



#5 2.5 Grammes taken

on 100 mesh	1.500
" 200 "	10.300
Thro " "	12.700
	24.500

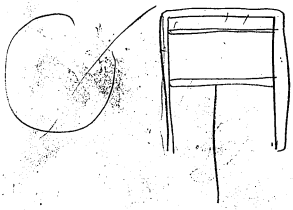
See ~~Five~~ pages before

Again 115 Grammes of fine material added and the mix passed over 9/1000 slot screen three times

Sample #4 Thro 9/1000

Another 115 Grammes added and screened 3 times as before

Sample #5 Thro 9/1000



25
45
65
27.5
142.5 Grams #3 Taken

29.9
36
65.9 Grams Thru 200 mesh

1420) 65.9 (45%
5720
8700

125
6.7
21) 795 (3.2
35
45

120 Grammes

3 lbs of "67 Tons" clinker

120 Grammes of Thru 200 mesh which would represents screenings from 6 lbs of "67 Tons" clinker.

First screening Thru 9/1000 slot

	112.3	Grammes
2.5 Grammes Taken		1.25
on 100 mesh	1.25	6.7
" 200 "	15.60	15.75
Thru " "	7.45	
	24.30	23.60

~~Second~~ screening Thru 9/1000 Slot

2nd	67.45	Grammes
3rd	75.85	"
4th	52.45	"

1.815
6.272
25) 8.087 (32%
75
58

15
3.7
7.5
2.20
2.0

25) 7.2 (28.8%

2.15
6.85
25) 9.00 (36%
7.5
1.50

2.20
3.75
5.95

25) 3.750 (15
25
125

Second screening 25 grammes taken

On 100 mesh		1.815	
" 200 "		5.272	
Thro "	"	16.70	
		24.857	

3rd screening 25 grammes taken

On 100 mesh		1.500	1.500
" 200 "		8.650	57
Thro "	"	14.350	17.600
		24.500	24.800

4th screening 25 grammes taken

On 100 mesh		2.15	2.15
" 200 "		8.10	6.85
Thro "	"	14.25	15.65
		24.45	24.65

25 grammes of "67 Tons" taken

On 100 mesh		18.95
" 200 "		2.20
Thro "	"	3.75
		24.90

48
29
432
465
3

81000
8352

6

3 3407
1201
214 Success over justice

126
120
112
360 - 360
81 -

3 lbs of "67 Tons" clinker
120 Grammes old atlas added

1st pass Thro. 9/pass slot 116 Grammes
2nd " " " " 89.65 "
3rd " " " " 67.62 "
4th " " " " 60.80 "

3 lbs of "67 Tons" clinker
360 Grammes old atlas added

1st pass Thro 9/pass slot 128.5 Grammes
2nd pass " " 120
3rd pass " " 112
4th pass " " 81
441.5
1360
81 gms species -

25) 7000 (2.8
500
200

25) 695
27.8

24350) 675000 (27.
48700
188000
170450
500

24350) 675000 (27
48700
188000
170450

3 lbs of "67 Jons"
without addition of fines

1st	104.5 Grammes
2nd	71.0
3	52
4th	35
	262.5

3 lbs of "67 Jons"
360 Grammes old alloy added
1st Pass Jhm 0/00 25 Grammes Taken

on 100 mesh	0.700	
" 200 "	6.250	27 0/0
Thru 200 "	17.400	0.0 2.0
	24.350	

2.8 0/0 on 100

25) 2200 (48
200
200

1580) 87000 (55
79000
8000

25) 715 (28.6
50
215
200
150

24500) 87000 (35
73500
135000
122500

25) 915.0 (36.6
75
165
150
150

3rd pass 2.10 grams added
on 100 " 1.150
on 200 " 7.550
Thru " " 15.800
24.500

35% on 200 mesh

25 grams old atlas lake
On 100 mesh 2.200
on 200 6.950
13.750
22.900

25 grams old atlas
on 100 2.200
on 200 — 4.950
Through balance

28.8%

185
445
25 | 630 | 25
50

25 | 980 | 39.2
75
230
200
50

25 | 445 | 17.8
25
195
175
200

Dykerhoff
25 grms

On 100 2.90
on 200 − 6.90
15.55
Through balance − 25.15

39.2% on 200 −

"9 Sheave Test"

25 Grammes Taken
on 100 mesh 18.65 grams
" 200 " 1.85
Thru " " 4.45
24.95

Thin medium and Thick cakes from "19 Steam Test"

Thick 25 Grammes taken

On 100 mesh	16.700		
" 200 "	2.225		
Thro " "	5.900		23.6 fine.
	24.825		17.7 Tons.

Medium

On 100 mesh	15.300	
" 200 "	2.050	29.8
Thro " "	7.450	
	24.800	14.9 Tons

Thin

On 100 mesh	13.250	
" 200 "	2.650	35.4
Thro " "	8.850	
	24.750	8.85 Tons

80 Tons in stream
100% crushing 8 tons fines.

20 Tons enter per hour
15 minutes run

333
60
19980 800
38500

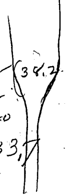
Loss on Tailings is
5 Lamp hours per day

200 — 2½.
30 — 16%
3.1%

30000 — 150
15000
5 / 1200
240
960

1530
15
25) 1545 (61.8
150
45
25
200

25) 955 (38.2
75
205
200
50



25) 843 (33.7
75
93
75
18

2500
2488
12

1645
12
1657 (66.3

25) 120
1645
1765 (70.6
175
150

147 lbs 40 lbs air

2" opening 4-5 seconds

1st time 4 screens
Thro 9/1000 25 1/2 lbs
2nd " " 23 1/2 "
3rd " " 18 "

1st & 2nd mixed
On 100 mesh 2.50 } 38.2%
On 200 " 7.05 }
Thro 200 " 15.30 61.8
24.85

3rd time Thro 9/1000 25 grammes taken
On 100 mesh 2.10
" 200 " 6.33 33.7
Thro " " 16.45 66.3
24.88

75

25) 970 (3.88
75
220
200
200

25) 1480 (60
13
1493
150

25) 5500 (22.
50
500
500

25) 18530 (74.1
175
103
100
3

150 lbs in 3 seconds

40 lbs on 9 screens

Run four times Thro rolls

134 lbs run over 9/1000

4 screens high

32 1/2 lbs of fines Thro.

---

from 9/1000 slot screen

25 Beginner Taken

on	100 mesh	0.970	3.88 %	
"	200 "	5,500		
Thro	" "	18,400	22 %	
		24.870	74.1	

---

102 lbs. left this run over

4 - 9/1000 screens

10 lbs of fines

on	100 mesh	3.050	40 %	
"	200 "	7.050		
Thro	" "	14.800	60 %	
		24870		

25 Grammes Taken 99

1st run

On 100 meat		19.850	
" 200 "		1.850	
Thro " "		3.250	
		24.950	13.2

2nd run

On 100 meats		17.550	
" 200 "		2.300	
Thro " "		5.400	
		24.250	21.6

3rd run

On 100 meat	16.920	16.600	23.8
" 200 "	2.520	2.550	
Thro " "	5.350	5.750	
	24.790		

4th run

On 100 meat	15.320		
" 200 "	2.670		28%
Thro " "	6.800		
	24.790		

Crude from tin — ~~on 100 24.50~~ ~~Through 200 1.001~~ 44% in original

Original in Bri
25 grams

on 100 24.00
on 200 .25 — 3%
through 200 .75

~~27) 45.50 (3~~
~~45~~

Test with screen 9/1000 in Experimental plant

On	100	mesh	4.20	16.8	
"	200	"	7.23	28.9	45.7
Thro	"	"	13.30	53.2	
			24.73	98.9	

210
387
25) 5.47 (
21.8

25) 210 (
8.4

21

24

24000

125
30

125
875

5

251

96

14.49
13.50
90
60

96000000

6000000

6000000
6000000
2400
24000000
12000000
144000000

#1 Alsens Portland Cement
from Bbl. at Phonograph Works

on 100 meal	2.10	grammes	8.4	%	21.9
" 200 "	3.87	"	13.5	"	
Thro " "	19.25	"	77.0	"	
	24.72		98.9		

#2 out of new atlas 20 Bbls

on 100 meal	2.30	grammes	9.2	%	24.0
" 200 "	3.70	"	14.8	"	
Thro " "	18.80	"	75.2	"	
	24.80		99.2		

#3 See Page 97 Edison Thro. 9/1000
after 4 times thro rolls.

on 100 meal	0.970	grammes	3.88	%	25.88
" 200 "	5.500	"	22.00	"	
Thro " "	18.400	"	73.60	"	
	24.870		99.48		

#4 Dyckerhoff from agent in Pg.
see page 89

on 100 meal	2.90	grammes	11.6	%	39.1
" 200 "	6.90	"	27.5	%	
Thro " "	15.35	"	61.4	"	
	25.15		100.5		

#5 old atlas see page 87

on 100 meal	2.200	grs	8.8	%	28.6
" 200 "	4.95	"	19.8	"	

#6 Vulcanite

on 100 meal	2.00 Grms.	8.00 %		
" 200 "	4.67 "	18.7 "	26.7	
Thro " "	18.50	74.0 "		
	25.17	100.7		

#7 "Gem" Saylors Copley Amount

on 100 meal	2.23 Grms	8.9 %	
" 200 "	3.73 "	14.9 "	23.8
Thro " "	18.65	74.6	
	24.61	98.4	

#8 [illegible]

on 100 meal	1.640	6.6	
" 200 "	3.500	14.0	20.6
Thro " "	19.750	79.0	
	24.890	99.6	

#9 Bonnerville

60 Grammes Dynamitroff taken
and shaken and screened fairly
well

#4	On 100 mesh	9.00 Grms	15.70	
	" 200 "	10.20	17.	32
			68	

Sieve screen used

65 Grammes Vulcanite taken

#6	On 100 mesh	6.6	10.22	
				22.82

Sieve screen " 200 " 8.23 Grms 12.6

70 Grammes Y. Giant taken

#7	On 100 mesh	8.2	11.7	260
	" 200 "	10.0	14.3	

70 Grammes Lehigh

#8	On 100 mesh	5.1	7.3	
	" 200 "	~~11.6~~	~~15.9~~	~~23.2~~
		9.65	13.8	21.1

70 Grammes Aconite

#9	On 100 mesh	5.85	8.4	
	" 200 "	11.00	15.7	24.1

65) 66 (10.2
65
100

65) 823 (12.6
65
173
130
430

25) 400.0 (16
25
150
150

25) 1360 (54
125
110

25) 1140 (45.6
100.0
1400
1250
150

Left 25 Grammes

on 100 4.00 ~~[illegible]~~ 16.0%
" 200 7.40 29.6
Thro " 13.25 53%
24.65 75.6

---

100 Grammes Lehigh Clinker screened Thro 1045 round on 100 mesh

Squeezed 300 atmos on 3 sq. inches Thro 1 mutum

15.6 Grammes Thro 100

Squeezed 300 atmos on 3 sq. inches " mutum 1/4

24.6 Grammes Thro 100

of which on 200 Thro 200 17 Grammes
7.5 "
24.5 "

57.35) 18 00 (31.5
17105
8950
5735
32150

18) 1250 (69.4
108
170
162
80

60 Grams Lehigh Clinker
screened through -0.45 mm and
on 100 mesh.

This taken and placed in iron
flat mould over two molds
held on the mold by means
of paper and wrapped.

3.00 atmospheres on the material
for 1" diameter
1" wide 1" deep 2" long or
2 cubic inches. The strip
of iron or top was roughened
and then driven across the
material about 3/16 of an inch

Then on 100 39.35
Thro 100 18.00 - 31.5%
57.35

Of the 18 grams -
~~Thro~~ On 200 - 5.5 30.6
through 200 - 12.5 - 69.4
18.0

59) 13.9 (23.6
118
210
177
330

59.55) 12.8 (21.5
11910
8900
5955
29450

60 Grammes Lehigh Clinker 113 screened through .045 round and on 100 mesh wire screen.

2 extra inches pressed as before at 300 atmospheres for 90 seconds moulds reversed but the strip was moved

Then on 100 45.1
Thro 100 13.9 - 23.6 %
59.

Same as above except moulds not hammered.

On 100 46.75
Thro 100 12.8
59.55 21.5 %

Notes on test of cement in large excess of water.

7 grammes of cement, passing 200 mesh, put in 400 cc of water and vigorously stirred at short intervals at first.

Lehigh Cement showed the most rapid increase

~~Optimum~~ after about 48 hours clean cement was the highest. The ~~coarse~~ Edison crushing of Lehigh clinker showed up very badly.

Dark Lehigh clinker and light reddish colored Lehigh clinker were selected and crushed ~~. The dark colored~~ in a porcelain mortar very fine and passed

through 200 mesh sieve.
The dark colored swelled slowly to 3/4". The reddish colored did not swell at all. but laid dead on bottom of flask.

Potash tried in ~~[illegible]~~ the water helped the swelling slightly.

~~Load~~ Very small % of sugar in the water stopped the rise.

acids assist action
Alkalies help "

Alsen on 100 mesh showed increase in several days

Alsen 100 - 200 mesh swelled in short time and continued to swell

125 Grammes / Thro. 045
round on 100 mesh wire
screen. Placed on square
mould 2½" X 3¼" and
bar placed on top.

300 atmospheres used
then bar moved.

The coarse around
edges of mould removed
That which was left showed
On 100 mesh 52.1 Grammes
Thro " " 8.1 " 11.8
60.2

Same as above except bar not
moved
On 100 mesh 63.3
Thro " " 8.4 11.7¾
71.7

71.7) 840 (11.7
717
1230
717
5130

Ja. Adam Bright

12.6) 460 (36
378
820

17
500
8500

Repetition of Experiment on page 118 with water 300 atmos. held.
Piece taken from greatest pressure

On 100 – 8.00 tons
Thro 100 – 4.60 " 36%
12.60 "

2 3/4" size cylinder hydraulic press

2.75 area 5.94
3.4 15
2970
594
8910
300
26,730

2240) 26.730 (11.9 tons
2240
4330
2240
20900

26,730.00

8.910

993) 2.130 (2.14
1986
1440
1993
447

23.5
77.5
1175
1645
1822.25

9.88) 2.280 (2.31
1976
3044
2868
176

21.35
769
19215
12810
14945
16.4185
785
751
785
3925
785
11.8535

22.5
2.14
23.1
2.19
91.9
4 / 7.93

10) 7.95
7.95
7

7800 (7.85
6951
8490
7944
5460

9.88 / 7600 (7.69
6916
6848
5920
912

Grinding Lehigh Clinker
50 lbs. air. 7/32 stream of
ore. outlet office – 62 Hp. 50 bbls hour

46% on 200 mesh

This taken and passed over
7/1000 screen, coarse added

23.5 grams 10 grams taken 1st Pass
100 0.10
On 200 mesh 2.75 22.5 on 200 mesh
Thro 200 mesh 7.75 Thro 77.5% –

2nd Pass.
21.35 grams on 100 0.10 23.1% on 200 –
" 200 – 2.18
Thro 200 7.60
9.88 – 76.9

3rd Pass
15.1 grams on 100 0.09 21.4% on 200 mesh
" 200 2.04
Thro 200 7.80 78.15
993

134
742
938
536
938
100098
18.21
16.92
11.85
5648

22.97

994) 2740 (2.75
1980
7580
6920
560

274
321
2) 595
295.5
229.9
22.92
2) 5.72
2.63

6.86 | 4100 (
20
256
2760 (10
2744
686) 2744
702
7

4th Pass thro 7/1000 shot

13.4 Grains on 100 0.09
on 200 2.40 249
Thro 200 7.47 74.7%
9.96

5th to 8th Pass inclusive

41.3 Grains on 100 0.12
on 200 2.62 27.4
Thro 200 7.2
9.94

9th to 12th Pass inclusive

24.6 Grains on 100 0.25
on 200 2.97 32.1
Thro 200 6.72
9.94

Next few passes 7 Grains Taken

18.75 Grains on 100 .2 2.8%
on 200 2.56 37.6
Thro 200 4.10 58.6
6.86 99.0

40% on 200

58
3.32
685) 3900 (59
3425
4750
95

7) 530
75.7

87
3.17
5) 404
8.08

.230) 120.0 (.52 48% in
115
50

50
39) 2100
46
25
21

23.5
21.3
15.1
18.4
41.3
24.6
18.7
8.1
8.8
5.9
180.7 Total
64.8 Eq. Thru 200 mesh

14456
7228
108 42
117.1036 Grammes on 200

87
6.05
1987) 6.920 (34.8
5961
9590
7948
16820

117) 56.48
55.85
630

56% of this
Thru 7/1000
on 1st four passes

Next four passes . 7 Grammes taken
8.1 Grammes
On 100 0.58
on 200 3.32 57%
Thru 200 2.95
6.85

Next four passes 7 Grammes taken
8.85 Grammes
On 100 0.90
on 200 4.40 75.7%
Thru 200 1.72
7.02

~~Next~~ Last passes 5 Grammes taken
5.9 Grammes
On 100 0.87
on 200 3.17
Thru 200 0.93 80.8 %
4.97

Entire amount passing 7/1000 abt taken and thoroughly mixed . 20 Grammes taken.
On 100 0.87
" 200 6.05 34.8%
Thru 200 12.95 64.8
19.87

100 mg in 1000 cc
1 " " 10 cc

10	1 mg	"	400 ct	$\frac{1}{400000}$
30	3 mg		400	$\frac{3}{400000}$
60	6 "		400	$\frac{3}{200000}$
120	12 "		400	$\frac{3}{100000}$
180	18 "		400	
	24 "		400	

10000) 24.00 (.00.24

Water	Solution
370	30
340	60
280	120
220	180
160	240
100	300

$\frac{1}{400,000}$

24 × 3

5000) 300.0 (.06

5000

11.25) 330 (29.3
225
105.00
101.25
3.75

37.200 (17.2
21.62
15.580
15.144
0.436

4 / 3.14
.785) 8910 (11,400
785
1060
785
2750

22.5 / 5550 (24.6
4500
1050
900
150

11.22 / 5.92 / 5.27
5.616
2.050
2.272
+ 0.778

1.25

3.720
2.162
1.558
1.432
1.256

2.162 (12.350 / 5.7
10.810
1.540
1.512

2.162

.5625 (1.125 (2.000 (17.8
1.125

.5625 (1.1000 (1.9875 (.8750
.5625
.5375
.5062
.0312

Lehigh Cement Clinker Thro 9/1000 slot on 100 mesh wire screen

22.5 Grammes Taken and passed 100 atmospheres on 1' plunger or 0.785 square inch = 11.400 lbs per sq. inch

On 100	12.35		57.1%
" 200	5.55		24.6
Thro 200	3.72		
	21.62		17.2% fines

11.25 Grammes taken otherwise the same

On 100	5.92	52.7
" 200	3.30	29.3
Thro 200	2.00	17.8 %
	11.22	

5.625 Grammes taken otherwise the same

On 100	2.37	
" 200	2.07	
Thro 200	1.10	19.5 %
	5.54	

24
26
144
48
624

03 -

28 -

7

24
6
18

48
18
56 -

62) 624 (10 -

25) 7.95 (3.18
7
45
200

495 | 780 (1.57
495
285
247.50
37.50
10

17
12.65
9 21
6 00
4 | 44 1
11.24

1241 | 3540 (2.85
2482
1058
992.80
65.20
62.0

1241 | 7300 (5.88
6205
1095
992.0
103.0

7.3 | 1650 (22.6
146.0
19.6
14.0
4.4

~~11.00~~

73 | 4950 (67
438
57.4
1.570
1241
32.90
29.2
3.6
0.4
0.4
0.0

7.27) 0.6700 (9.21
6543
1570
1454
1.160

1241 -

495 | 3500 (7.6
3465
35.0

495 | 3000 (6.
2970
30.0

Material that had been passed 11.400 lbs per square inch gave 17.2% thru 200

Then sifted. That on 100 mesh taken and passed 11.400 lbs per sq. inch again

on 100	7.30	58.5	
" 200	2.54	28.5	
Thro 200	1.57		12.65% Thro 200
	12.41		

The 7.3 grammes on 100 mesh again passed 11.400 lbs

on 100	4.95	67%	22.6
" 200	1.65		
Thro 200	0.67		9.21% Thro 200
	7.27		

The 4.95 grams on 100 again passed

on 100	3.80	76	15.7
" 200	0.78		
Thro 200	0.30		about 6%
	4.88		

average of 4 crushings

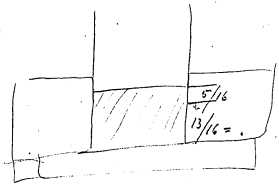
11.24 Through 200

$\frac{10}{22.5} \times 13$

225) 130 (5.7
1125
1750

12) 36000 (3

22½ grams of all dog stuff under 11000 lbs pressure ~~=~~ ~~weighing - thickness of~~ Compressed 5/16 of inch — Thickness of cheese under pressure



12 | 280 (23.3
24
40
36
4

110
40
440

12 | 105 (8.75
96
90
84
6

17

17
40
68

12 | 8020 (66.8
72
82
72
10

We now take 12 grammes & use 40 atmospheres instead of 100 which gives 11000 lbs — or 4400 lbs on the mould and which is probably equivalent to 40000 lbs pressure on our rails parallel corrugation 12 inches wide. —

one	100	8.02 —	66.8 %
one	200	2.80 —	23.3
Three	200	1.05	8.75 —
		12.05	

24
460
144
960
1040

22000
7000
31000
6000
5000
2000
10-
4

170
80
90

1044

550
600
330000 =

(24

1728) 42000
3456 Dr
7441
6911

460
160
276
460
436

10-
600) 50000 (250
40
1000

24
24
96

48
576
4608

20) 11000 (550
10
1000

25000
6000
30000
6000
32000
1800

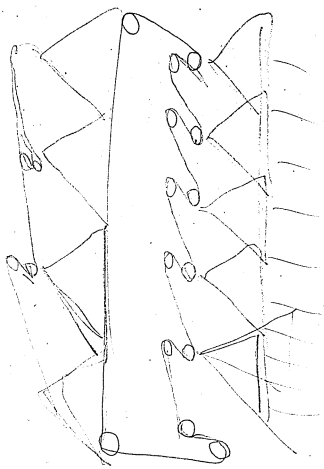
(45 1414

330000)

25) 316000 (14140
25
1600
1400
1000

14
36
44
40
50

34.1



May 25 1894

Solution No 20

Mercurous Oxide
in excess dis in
Nitric acid 1.2 minutes
Reagent free Hg put in
(while dissolving filtered
off undissolved) Hg_2O
& put clear solution
in bottle with
free Hg